

as being due to paralysis of the higher inhibitory mental processes. Incontinence of urine and faeces may occur, or retention of urine may aggravate restlessness. Fever, neck stiffness, and a positive Kernig's sign indicate irritation of the meninges by blood. Such signs will also develop if meningitis occurs, and the possibility of infection spreading through a hidden basal fracture must be borne in mind. Persistent headache, vomiting, and giddiness are common symptoms of brain contusion and, as pointed out earlier, may occur without loss of consciousness—that is, without concussion. The pulse rate is commonly raised for a day or so after brain contusion, and then is often succeeded by a bradycardia about the fourth day lasting for some days. The temperature may rise to 103° F. (39.4° C.), or even higher, within a few hours of a brain injury, although occasionally the injury is so severe that a pyrexial reaction does not occur; the thermo-regulatory mechanism is paralysed and the temperature falls; such injuries are commonly fatal.

When confronted with a case of head injury the presence of concussion with or without contusion may be self-evident; but a common difficulty is to decide whether the patient is also suffering from another disease or intoxication which may have caused him to fall and stun himself—for instance, epilepsy, acute alcoholism, uraemia, diabetes, or cerebral haemorrhage from atheroma or aneurysm. An account of the accident given by an eye-witness may be of great value; examination of the exterior of the cranium may reveal ample evidence of a severe injury. Information from relatives or the doctor's own knowledge of the past history of the patient may clarify the possible importance of non-traumatic causes of coma.

In every case of head injury the problem arises whether there is cerebral compression or whether it is going to develop later. An unpredictable period of time must elapse after the injury before compression of the brain can occur. Consequently, immediately after an injury *no one* can predict whether or not compression will occur. If the concussion is brief and consciousness rapidly returns, the symptoms of compression, the epiphenomena, will be more easily recognized. As the clot enlarges, the fully conscious patient complains of increasingly severe headache, he may vomit, and consciousness becomes clouded and is finally lost. But if the brain injury is severe there may be no lucid interval—that is, consciousness is not regained but gradually deepens as compression progresses, and the most critical observation is necessary in order to detect this change at the earliest moment. Accompanying the recurrence or the deepening of unconsciousness will be found fresh neurological signs of a paralytic order. The pupil on one side (usually the side of the bleeding) becomes dilated and fixed (non-reactive to light) and the other pupil later follows suit. The opposite limbs become paralysed, their tone abnormal (sometimes spastic and sometimes flaccid), the tendon reflexes increase, and the plantar response becomes extensor. If the compression is not relieved the limbs on both sides become paralysed, and the patient may finally present a state of decerebrate rigidity with bilateral extensor plantar responses. Respirations become deep, laboured, and stertorous, and may terminally show Cheyne-Stokes rhythm; the patient's face is congested. Occasionally increase of blood pressure and a bradycardia may occur as cerebral compression develops; more commonly, however, little change occurs in the blood pressure after the patient comes under observation, and the pulse rate steadily mounts.

The crux of the matter lies in the repeated observation and recording of the patient's condition in order to detect at the earliest moment any deterioration of, or deviation from, the basic state. Where coma persists without improvement, or where abnormal signs lead to suspicions of the presence of a compressing lesion, it is advisable to make certain of the diagnosis by exploratory operation. This comprises the drilling of small burr-holes or trephine-holes over appropriate areas of the cranium; it should be done under local analgesia, and causes little disturbance of the

patient. It may prove a life-saving measure and should not be unduly deferred, for when compression has developed the patient's condition may worsen with incredible rapidity. Whether the haemorrhage is extradural, subdural, or intracerebral is of more moment to the surgeon who has to deal with the case. The time of onset of the change in the patient's condition, the rapidity of deterioration, the crispness of localizing signs or their diffuseness and insidious march, and the presence of local scalp or skull damage, all may help in locating the site of bleeding.

[Part II will appear in our next issue.]

Refresher Course Book.—The first 55 articles of this series (fully revised) are available as a book, price 25s., from the Publishing Manager, B.M.A. House, Tavistock Square, London, W.C.1.

Nova et Vetera

EARLY CONTRACEPTIVE SHEATHS

During a recent examination of the contents of a muniment room in a large English country mansion a locked box was discovered which, on being opened, was found to contain a number of sheaths of an early type. They were in packets of eight, of three different sizes, and the inner (white) and outer (blue) wrappers were apparently those in which they had been delivered.

Some of these sheaths were brought to me at the British Museum for examination and report. The specimen submitted is apparently made from some animal membrane, and as far as could be discovered is seamless, the edge of the open end being turned over and roughly stitched with cotton to form a hem through which is threaded a strip of silk. Its approximate dimensions are: length, 190 mm.; diameter, 60 mm.; thickness, 0.038 mm. (as compared with the thickness of a modern thin rubber sheath of 0.075 mm. The membrane was found to be permeable to water and to a solution of salt and water. Both white and blue wrappers were made from rag and neither showed any watermark, the chain and laid lines being clearly visible; the blue colour of the outer wrappers was due to indigo.

If it be true, as is held by some authorities, that the appearance of a piling up of the pulp beside the chain lines (which is present in the white wrapper) indicates a date of manufacture probably prior to 1800, then this, with other features in the case, suggests that the date to be assigned to these sheaths is between about 1790 and 1810.

Although the inventor of the contraceptive and preservative sheath is still unknown, in spite of the attempts to prove that he was Colonel Condon or Cundum living in the reign of Charles II, much has been recorded about it in later times, especially in the eighteenth century. At that time skin sheaths were often used, and such devices continued to be sold till the twentieth century, when they gradually fell into disuse in England, being replaced with the more durable rubber condoms.

References in Literature

The specimens recently discovered are very similar to that described by Casanova (1725-98) in his *Mémoires* (Paris, 1931-2 ed., vol. 5, p. 275), where he speaks of a "petit habit d'une pellicule transparente d'environ huit pouces, sans issue et armée à son entrée d'une faveur rose passée dans une coulisse." Similarly, elsewhere, he writes of being shut up "dans un morceau de peau de mort pour avoir le bonheur de vous prouver que je suis parfaitement en vie."

In England these sheaths were often praised in the poetry of the period, and in Joseph Gay's *The Petticoat* (1716) we read that

"The *New Machine* a sure Defense shall prove,
And guard the sex against the Harm of Love."

and that in this great invention there can be discerned what can only be called "Master-strokes of Art." Again in *The Potent Ally* (1741), as in the more famous *Panegirick upon Cundums*, it is said that

"Happy the man, who in his pocket keeps,
Whether with *Green* or *Scarlet* Ribbon bound,
A well made C—M."

the same article being described in *A New Description of Merryland* as "proper cloathing, of which they have a sort that is very commodious." It was, it is stated, made "of an extraordinary fine thin substance, and contrived so as to be all of one Piece, and without a Seam, only about the Bottom it is generally bound round with a scarlet ribbon for Ornament." Similar praise is to be found in *The Machine* (1744), where a plate depicts the making of the "capotes anglaises," and where, for the sake of safety, two are advised to be worn.

In London the chief purveyors of these goods were Mrs. Philips, Mrs. Perkins, and Mrs. Lewis, of whom Mrs. Philips was the best known and widely recognized not only in England but also in France, where her goods were called "les plus renommées," as we can see from a passage in Andréa de Nerciat's *Le Diable au Corps*. In colloquial speech these sheaths were often called *armour* in England, and thus we find in Boswell's accounts of his adventures in London and Holland occasional mention of these articles when he is narrating some of his amorous engagements in "armour complete."

It is, however, in the *Panegirick upon Cundums* above mentioned that we find the most laudatory verses "in Cundum's mighty Praise." These pieces of "intervening Armor" permitted

"Joys untasted but for them,
Unknown Big Belly and the squawling Brat."

and are also said to be the best guard of modesty, while in that "soft answer to a scurrilous satyr," *Almonds for Parrots*, the inventor of these sheaths is styled the "Patron of the Paphian Deity."

Prevention of Venereal Disease

Medical views of these early contraceptives were strongly influenced by the use to which they could be put as a preservative against venereal disease. Fallopius, as is well known, discussed an early form of sheath; and Hercules Saxonia in his *Luis Venerae perfectissimus tractatus* (1597) described a similar device made of some kind of linen soaked in a solution and allowed to dry, a method actually hinted at by the notorious eighteenth-century writer John Marten, who refrained from giving details of the wash lest it should give "too much encouragement to the Lewd." Later authors also did not approve of these sheaths for various reasons, principally, it would seem, because they allowed libertines occasionally to escape the results of their illicit connexions. Thus, for example, Gervais Ucay, writing towards the end of the eighteenth century, although aware of these mechanical methods, maintained that the best preservative was continence. Daniel Turner (1667-1741) regarded the suggestion of Fallopius as being given with "greater Vivacity than Veracity," while Joseph Cam went so far as to say that these methods of preventing venereal disease "ought not to be allowed in a Christian Country," since to advise mankind to "use Machinery, and to fight in Armour" was merely to propagate wickedness. On the other hand, E. C. Bourru stated in 1770 that these English sheaths were subject to tears, and as they were "criblée d'une infinité de pores" they were of little use as a preventive of disease and were, moreover, invented for the purposes of libertinism.

E. J. DINGWALL.

Correspondence

Because of the present high cost of producing the Journal, and the great pressure on our space, correspondents are asked to keep their letters short.

Research into Familial Intestinal Polyposis

SIR,—For more than 25 years the research department of St. Mark's Hospital, assisted by an annual grant from the British Empire Cancer Campaign, has been collecting information about the inheritance, pathology, and treatment of familial intestinal polyposis (*Polyposis intestini*).

More than 50 families have been investigated, and in each case a complete family pedigree has been constructed. A special follow-up department has been organized to keep in touch with all these polyposis cases and their relatives, of whom more than 1,000 are now included in the hospital records. It would be of great assistance to the further development of this work if doctors who know of other cases of generalized intestinal polyposis would be good enough to send me the names and clinical details of such patients, having obtained their permission to do so. This would enable me to trace linkages between new cases and families already investigated. If any such linkage could be discovered, either now or at a later date, I should inform the doctor at once, but should not of course communicate with the patient unless the doctor wished me to do so.

I am signing this letter because I am responsible for organizing this research, but I should like it to be understood that all the surgical staff of St. Mark's Hospital are actively co-operating in this investigation.—I am, etc.,

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CUTHBERT DUKES.

Kwashiorkor

SIR,—Dr. Charles Rotman's proposals (December 6, 1952, p. 1257) for nutritional research into the treatment of kwashiorkor reveal considerable misconceptions concerning the metabolism of proteins. Dr. Rotman implies that kwashiorkor cannot be adequately treated with a vegetable protein diet because vegetable proteins are little used by our intestinal organisms for growth and synthesis of vitamins. In the first place, the only protein available to the bacteria is the undigested part of the diet. This is usually greater on vegetable diets than on animal foods because of the mechanical occlusion of the digestive enzymes by the indigestible cellulose. Secondly, the limiting factor in intestinal bacterial nutrition would appear to be carbohydrate rather than amino-acids, because poorly digested carbohydrate, such as uncooked potato starch, permits rapid growth of intestinal bacteria. Thirdly, Dean showed (October 11, 1952, p. 791) that vegetable protein can cure kwashiorkor.

Dr. Rotman's admiration of the adaptability of the human body because it can manufacture its own protein (we presume that the phrase "its own vitamin" in his letter is a *lapsus linguae*) is very naive. The human body can manufacture proteins only from their constituents, the amino-acids, which are present in a wide variety of proteins ranging from sows' ears to silk. The body simply takes from the dietary protein such amino-acids as it requires to synthesize protein, and oxidizes the rest. The trouble arises when some of the required amino-acids are absent from the ingested proteins. The required amino-acids are frequently as well supplied by vegetable proteins as by animal. For example, five common vegetable proteins, wheat bran, potato tuberin, soya bean, rice and maize germ, all have biological values for the rat of about 75, while four common animal proteins, casein, pork, gelatin, and blood, have biological values of only 69, 74, 25, and 16 respectively. Dean's findings are in